

**REMARKS**

**I. Introduction**

Pending claims 1-12 and 15 have been examined and are rejected. Specifically, claims 1-4 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by newly applied Offenberg, U.S. Patent No. 5,683,591 (hereinafter “Offenberg”); claims 5, 8-9, 12 and 15 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by newly applied Hetrick et al., U.S. Patent No. 6,404,028 (hereinafter “Hetrick”); and claims 6-7 and 10-11 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hetrick in view of Offenberg.

By way of overview, Applicants cancel claims 1-4 without prejudice or disclaimer and traverse the rejections of claims 5-12 and 15.

**II. Claim Rejections -- 35 U.S.C. § 102(b)**

Claims 1-4 stand rejected under § 102(b) as allegedly being anticipated by Offenberg. As noted above, claims 1-4 are canceled.

**III. Claim Rejections -- 35 U.S.C. § 102(e)**

Claims 5, 8-9, 12 and 15 stand rejected under § 102(e) as allegedly being anticipated by Hetrick.

**Claims 5 and 9**

Claim 5 recites, *inter alia*, “forming an anti-stiction layer that is removed by dry etching for preventing stiction on the substrate” (*see also* claim 9).

The Examiner alleges that the amorphous hydrogenated carbon (AHC) layer of Hetrick corresponds to the anti-stiction layer of claim 5 (*citing* Hetrick: col. 7, lines 41-44; and col. 8, lines 23-25).

To the contrary, in one embodiment, Hetrick describes a micromechanical device that is coated with an amorphous hydrogenated carbon (AHC) coating after fabrication of the device (Hetrick: col. 7, lines 25-44). In this embodiment, the AHC coating is not removed by any process and thus cannot correspond to the recited anti-stiction layer (*see* claims 5 and 9).

In another embodiment, Hetrick describes a micromechanical device in which the microstructure itself is made of AHC (Hetrick: col. 7, lines 46-49; and Fig. 3). In this embodiment, a release layer 44 (*e.g.*, a photoresist layer) facilitates patterning of the AHC layer (Hetrick: col. 7, lines 57-67; and Fig. 9). A solvent is used to attack the release layer 44 and remove the AHC deposited on top of the release layer 44, while leaving the AHC deposited underlying material to form patterned structures (*Id.*).

This use of a lift-off process involving a solvent to pattern the AHC to form a desired microstructure (Hetrick: col. 8, lines 18-27; and Figs. 9-10) does not correspond to removing an anti-stiction layer by dry etching. Instead, in Hetrick, the underlying AHC structural layer is protected from being etched at all so that an AHC layer remains on the substrate and so that the microstructure is formed of the AHC (Hetrick: col. 8, lines 38-43).

Indeed, the removal of the AHC layer 42 deposited on top of the release layer 44 is effected to pattern the AHC based on the desired microstructure and not to “release the at least one microstructure while preventing stiction”, as recited in claim 9. Thus, the AHC

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layer/structure, as used in this embodiment, does not correspond to the recited anti-stiction layer (see claims 5 and 9).

In view of the above, claims 5 and 9 are not anticipated by Hetrick.

#### Claims 8 and 12

Consequently, claims 8 and 12 are not anticipated by Hetrick, at least by virtue of their dependency from claims 5 and 9, respectively.

#### Claim 15

As noted above for claims 5 and 9, neither the release layer 44 nor the AHC layer 42 (deposited on top of the release layer 44) corresponds to the anti-stiction layer of the claimed invention (see claim 15).

Furthermore, claim 15 requires that the anti-stiction layer is formed on the sacrificial layer. Conversely, in Hetrick, the AHC layer 42 is not formed on the sacrificial layer 36. Additionally, even assuming *arguendo* that the Examiner alleges that the release layer 44 is a sacrificial layer, the release layer 44 cannot correspond to the sacrificial layer of claim 15 because it is not formed on the substrate 26/28/30.

For at least these exemplary reasons, claim 15 is not anticipated by Hetrick.

#### **IV. Claim Rejections -- 35 U.S.C. § 103(a)**

Claims 6-7 and 10-11 stand rejected under § 103(a) as allegedly being unpatentable over Hetrick in view of Offenberg.

In view of the deficiencies of Hetrick set forth above for claims 5 and 9, which are not cured by Offenberg, claims 6-7 and 10-11 are patentable over a reasonable combination, if any,

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of Hetrick and Offenbergs, at least by virtue of their dependency from claims 5 and 9, respectively.

## V. Claim Objections

Applicants amend claim 15 to correct two typographical errors, thereby obviating the Examiner's objections.

## VI. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

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Respectfully submitted,



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